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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/583,958
Filing Date: June 21, 2006
Appellant(s): RUNE ET AL.

Hyung Sohn
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 06/17/2010 appealing from the Office action mailed 11/17/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 42-57, 59-78, 80 and 82.

Claims 58 and 79 are objected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

2003/0161284 A1	**Chen**	**Feb-2003**
2005/0043045 A1	**Cheng et al.**	**Aug-2003**
2002/0126664 A1	**Kiiski et al.**	**Jun-2001**
6,331,983 B1	**Haggerty et al.**	**May-1997**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 42-43, 46, 52-54, 56-61, 64, 70-73, 75-80 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2003/0161284 A1) in view of Kiiski et al. (US 2002/0126664 A1) and further view of Cheng et al. (US 2005/0043045 A1).

Consider **claims 42, 60, (82** A usable medium, storing…**).** Chen teaches a router in an Internet Protocol, IP, based UMTS Terrestrial Radio Access Network, UTRAN, Transport Network within a Universal Mobile Telecommunication System (Paragraphs [0016], [0031] teach UMTS system wherein contain radio network controller, IP, node b), the UTRAN transport network carrying Dedicated Channel (DCH) frames on DCHs between a RNC and at least one Node B, the router comprising (Paragraphs [0067-0072], Fig1, Illustrate and teach the connection through UTRAN which involve **routing** through one or more RNC, node-B, see paragraph [0007-0008]).

- *The examiner notes Chen teaches soft handover and use Marco-Diversity Combining for routing/splitting*.

Chen teaches the claimed limitation as discussed above **but is silent on**

means for splitting one input downlink DCH traffic flow originating from the RNC into at least two output downlink DCH traffic flows by using an IP multicast protocol,

wherein each output downlink DCH flow carries user data destined to a same end user equipment, and

wherein the router is separate from both the RNC and the Node Bs, and wherein the router is in a communication traffic path between the RNC and the at least one Node B

In an analogous art, **Kiiski teaches** means for splitting one input downlink DCH traffic flow originating from the RNC into at least two output downlink DCH traffic flows by using an IP multicast protocol,

wherein each output downlink DCH flow carries user data destined to a same end user equipment, (Paragraphs [0025], [0042] , [0055-0056], Fig.1 show RNC that having Macro Diversity Combining (MDC) wherein splitting the down link DCH traffic to Node b (BS1-BS3), further node b output down link to mobile station (MS)).

It would have been obvious at the time that the invention was made to modify Chen with **Kiiski**'s system such that routing the IP from RNC to Node B and to Mobile station that carrying Dedicate Channel in order to increase the efficiency of traffic transmission in internet protocol with low cost. However, the combination of Chen and Kiiski are **silent on**

wherein the router is separate from both the RNC and the Node Bs and wherein the router is in a communication traffic path between the RNC and the at least one Node B

In an analogous art, **Cheng teaches** wherein the router is separate from both the RNC and the Node Bs and wherein the router is in a communication traffic path

between the RNC and the at least one Node B (Paragraph [0021-0022] teach the router that located between Node B and RNC).

Therefore, it would have been obvious at the time that the invention was made to modify Chen and Kiiski with Chen's system such that wherein the router is separate from both the RNC and the Node Bs in order to provide multiple routing to different node that helping the user communicate to the strongest node.

Consider **claims 43 and 61**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Kiiski teaches wherein the router comprises means for replicating each DCH frame of the input downlink DCH traffic into a corresponding DCH frame of each output downlink DCH traffic flow and means for transmitting the replicated DCH frames of all output downlink DCH traffic flows according to the IP multicast protocol (Paragraphs [0025], [0042] , [0055-0056], Fig.1 show RNC that having Macro Diversity Combining (MDC) wherein splitting the down link DCH traffic to Node b (BS1-BS3), further node b output down link to mobile station (MS)).

Consider **claims 46 and 64**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Chen teaches wherein each DCH traffic flow is assigned a dedicated multicast destination address in the at least one Node B (Paragraphs [0067]).

Consider **claims 52 and 70**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Chen teaches comprising: means for identifying DCH frames belonging to different uplink DCH traffic flows by means of utilization of a multicast address, assigned as the downlink destination address, as a source address of the DCH frames sent in the uplink DCH traffic flows from all participating Node Bs (Paragraphs [0060-0063]).

Consider **claims 53 and 72**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Chen teaches comprising: means for identifying DCH frames belonging to different uplink DCH traffic flows by retrieving a destination address and the destination port(s) of the uplink flows from the RNC (Paragraphs [0054], [0060-0063]).

Consider **claims 54 and 73**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Chen teaches comprising :means for identifying DCH frames belonging to different uplink DCH traffic flows by using an uplink flow identity implicit in a downlink DCH traffic flow (Paragraphs [0060-0063]).

Consider claims **56 and 77.** The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further, Kiiski teaches wherein the router comprises means for combining at least two uplink DCH traffic flows into one single uplink DCH traffic flow (Fig.1 show DMC that combining at least two uplink DCH traffic

flows).

Consider **claims 57 and 78**. The combination of Chen and Kiiski and Cheng teach the router according to claim 56 and 77, further Chen teaches wherein the means for combining comprises further means for building a new DCH frame from a received set of DCH frames in the at least two uplink DCH traffic flows to be combined, encapsulating the new DCH frame in a UDP packet and sending the UDP IO packet in the uplink direction (Paragraphs [0054], [0060-0063]).

Consider **claims 59 and 80**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, further Chen teaches comprising: means for estimating a Latest Accepted Time of Arrival (LAToA) for a next set of DCH frames to be combined having a Connection Frame Number n (CFNn) based on times of arrival of the previous set of frames having a CFN n-1, and means for adjusting the estimates of the LAToA for each new frame adapted to a maximum transport delay that a frame can experience under normal circumstances on its path from the at least one Node B to the router (Paragraphs [0063], [0074-0080]).

Consider **claims 71 and 75**. The combination of Chen and Kiiski and Cheng teach the method according to claim 70, further Chen teaches comprising: identifying an originating Node B of an uplink DCH frame, based on a destination IP address and a

destination UDP port assigned by the RNC to the Node B for the uplink of the DCH (Paragraph [0048-0049]).

5. Claims 44-45, 47-51, 55, 62-63, 65-69, 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 2003/0161284 A1) in view of Kiiski et al. (US 2002/0126664 A1) in view of Cheng et al. (US 2005/0043045 A1) and further view of Haggerty (US 6,331,983).

Consider claims **44 and 62**. The combination of Chen and Kiiski and Cheng teach the router according to claim 42 and 60, **but is silent on** wherein the IP multicast protocol is a Core Based Trees Multicast Routing version 2, CBTv2 protocol.

In an analogous art, **Haggerty teaches** wherein the IP multicast protocol is Core Based Trees Multicast Routing version 2, CBTv2 (Col. 6, lines 53-54)

It would have been obvious to one skilled in the art at the time of the invention was made to modify Chen and Kiiski and Cheng with Haggerty's system, such that he IP multicast protocol is Core Based Trees Multicast Routing version 2, CBTv2 to provide means for transmit traffic to all member of its destination with the dame quality and reliable.

Consider **claims 45 and 63.** The combination of Chen and Kiiski and Cheng with Haggerty teach the router according to claim 42 and 60, further Haggerty teaches wherein the IP multicast protocol is Protocol Independent Multicast-Sparse Mode (PIM-SM) protocol (Col. 6, lines 53-55).

Consider **claims 47 and 65**. The combination of Chen and Kiiski and Cheng with Haggerty teach the router according to claim 46 and 60, further Haggerty teaches wherein the means for splitting further comprises means for identifying a mapping between the RNC and the multicast destination address by using CBTv2 or PIM-SM bootstrap mechanism (Col. 7, lines 45-59, Col. 18, lines 30-35).

Consider **claims 48 and 66**. The combination of Chen and Kiiski and Cheng with Haggerty teach the router according to claim 42 and 60, further Haggerty teaches further comprising means for determining whether the router is a splitting and/or combination router by using the protocol(s) CBTv2 and/or MLD, wherein the protocol(s) are/is arranged to determine the number of listeners for a specific multicast destination address (Col.11, lines 45-55, Col.13, lines 56-56).

Consider **claims 49 and 67**. The combination of Chen and Kiiski and Cheng and Haggerty teach the router according to claim 42 and 60, further Haggerty teaches further comprising: means for determining whether the router is a splitting and/or combination router by using protocol(s) PIM-SM and/or MLD wherein the protocol(s) are/is arranged to determine a number of listeners for a specific multicast destination address (Col.11, lines 45-55, Col.18, lines 30-36).

Consider **claims 50, 51, 68 and 69**. The combination of Chen and Kiiski and

Cheng and Haggerty teach the router according to claim 42 and 60, further Haggerty teaches further comprising: means for determining whether the router is a splitting and/or combination router by using the protocol(s) PIM-SM and/or Internet Group Management Protocol, IGMP, wherein the protocol(s) are/is arranged to determine a number of listeners for a specific multicast destination address (Col.11, lines 45-55, Col.4, lines 56-63).

Consider **claims 55 and 74**. The combination of Chen and Kiiski and Cheng and Haggerty teach the router according to claim 42 and 60, further Haggerty teaches wherein the router comprises means for identifying DCH frames belonging to different uplink DCH traffic flows by modifying MLD or IGMP protocol and a multicast routing protocol such that a destination port of an uplink is included in messages that are used to build a multicast tree (Col.5, lines 10-34).

Allowable Subject Matter

6. Claims 58 and 79 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(10) Response to Argument

A). In response to the appellant's argument in claim 42 is that the combination of prior art fails to teach or suggest "wherein the router is separate from both the RNC and the Node Bs and wherein the router is in a communication traffic path between the RNC

and the at least one Node B", further, the appellant's point to Kiiski that discloses the feature of the router "the router is in a communication traffic path between the RNC and the at least one Node B", the examiner respectfully disagrees for the following reasons. Firstly, the examiner must give each claim its broadest, reasonable interpretation.

1). The appellant's argument is irrelevant since the examiner did not use Kisski to teach the "router" in a communication traffic path between the RNC and the at least one Node B". Clearly examiner indicated in the rejection that the examiner using Cheng et al. (US 2005/0043045 A1) teaches "wherein the **router** is separate from both the RNC and the Node Bs and wherein the **router** is in a communication traffic path **between the RNC and the at least one Node B** (Paragraph [0021-0022] teach the router that located between Node B and RNC).

[0021] As utilized herein, a "data network" may refer to one or more **communication networks**, channels, links, or **paths**, and systems or devices (such as **routers**) **used to route data** over such networks, channels, links, or **paths.**

[0022] Thus, those skilled in the art will appreciate that the communications system 100 facilitates communications between the UEs 120 and the data network 125. It should be understood, however, that the configuration of the communications system 100 of FIG. 1 is exemplary in nature, and that fewer or additional components may be employed in other embodiments of the communications system 100 without departing from the spirit and skill of the instant invention. For example, system 100 may employ **routers (not shown) between the Node Bs 130 and the RNC 138 or CN 165**.

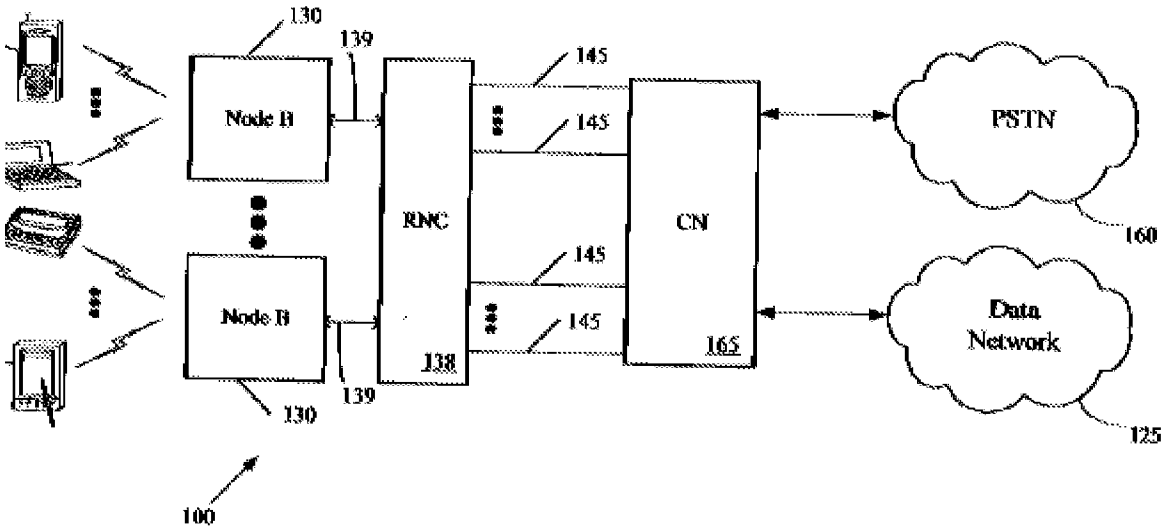

FIGURE 1

For the above reasons, Cheng (US 2005/0043045 A1) is clearly teaches and suggest the limitation of claim.

B). In response to appellant's argument in claim 46 and 64 that the combination of prior art does not mention of "wherein each DCH traffic flow is assigned a dedicated multicast destination address in the at least one Node B".

The examiner respectfully disagrees, Chen clearly teach the radio frame which broadly read as multicast wherein radio frame encapsulated by protocol called dedicate channel framing protocol (DCHFP) and transmit to RNC, further Node B encodes the frame number into the header of the dedicated channel framing protocol (DCHFP) and transport blocks for the dedicated channel (see Chen, paragraphs [0067]).

[0067] **Radio frames** are produced by the physical layer at base station (Node B). The transport blocks in a radio frame are then encapsulated by a protocol called dedicated channel framing protocol (DCHFP) and forwarded to the radio network controller RNC. The base station **(Node B) encodes the frame number**

into the header of the dedicated channel framing protocol DCHFP frame and place the transport blocks for the dedicated channel or dedicated channels carried by the dedicated channel framing protocol DCHFP frame (in sequential order as prescribed in Third Generation Partnership Project 3GPP Technical Specification 25.247 in the body of the dedicated channel framing protocol DCHFP frame. The dedicated channel framing protocol DCHFP generates one packet data unit PDU at the end of each transmission time interval (TTI). The transmission interval length is a multiple of 10 ms, depending on how many radio frames the base station (Node B) must receive in order to extract the transport blocks.

C). Appellant's argument in claims 52-54, 57, 70, 72-73, 78 is that the combination of prior does not indicated how the uplink flows are identified and any indication of utilizing a multicast address".

The examiner respectfully disagrees, as mentioned above, the radio frame is broadly read as multicast. Further Chen clearly teach frame selection applies to dedicated channel (DCHs) on the uplink on the Iub and Iur interface wherein the radio network controller RNC perform selection frames received from different radio legs. (see Chen, paragraphs [0054], [0060-0063]).

D). Appellant's argument in claims 59 and 80 is that the combination of prior art does not described relationship between frames associated with different frame numbers.

The examiner respectfully disagrees, Chen clearly teach the base station (Node B) and the RNC are frame synchronized which constructs and delivery/distributed to

user equipment with a frame number being incremented (see Chen, paragraphs [0063], [0074-0080]).

E). Appellant's argument in claims 71 and 75 is that the combination of prior art does not indicated that the RNC assigns a destination IP address and/or ports to the Node Bs.

The examiner respectfully disagrees, Chen clearly teach in the uplink direction, the channel of the mobile station is received from Node Bs and the received data routed to the radio network controller RNC for combining wherein the internet protocol IP is used on the Iub interface between Node B and RNC (see Chen, paragraph [0048-0049]).

F). Appellant's argument in claims 55 and 74 that the combination of prior art is silent regarding identifying DCH frames by including any type of destination port in any uplink messages.

The examiner respectfully disagrees, as discussed above that Chen teaches frame selection applies to dedicated channel (DCHs) on the uplink on the Iub and Iur interface. Further Haggerty is put forth to meet the limitation of "IGMP protocol and multicast routing" see Col. 5, lines 28-34, where the IGMP are use by multicast routing protocol.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Kiet Doan/

Examiner, Art Unit 2617

Conferees:

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